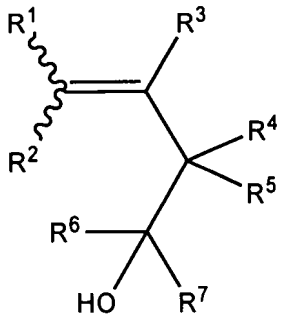
This listing of the claims replaces any and all prior versions and listings of claims in the application:

LISTING OF THE CLAIMS

1. (Withdrawn) An alkene fluoroalkanol having the structure of formula (III)

(III) 

wherein:

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^2 is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring;

R^{6A} is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, and -(CO)-R in which R is hydrogen, hydroxyl, halo, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, amino, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino; and

R^{7A} is C_1-C_{24} alkyl or substituted C_1-C_{24} alkyl, and further wherein R^{6A} and R^{7A} may be taken together to form a ring, with the proviso that at least one of R^{6A} and R^{7A} is fluorinated.

2. (Withdrawn) The alkene fluoroalkanol of claim 1, wherein:

R^1 is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_3-C_{12} hydroxyalkyl, fluorinated C_3-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^2 is selected from hydrogen, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, and fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{30} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} haloalkyl, and carboxyl; and

R^{7A} is C_1-C_{12} alkyl or fluorinated C_1-C_{12} alkyl.

3. (Withdrawn) The alkene fluoroalkanol of claim 2, wherein:

R^1 is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^2 is hydrogen or C_1-C_8 alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is fluorinated C_1-C_8 alkyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{18} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl; and

R^{7A} is C_1-C_8 alkyl or fluorinated C_1-C_8 alkyl.

4. (Withdrawn) The alkene fluoroalkanol of claim 3, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl,

trifluoromethyl, difluoromethyl, and fluoromethyl, and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{12} alicyclic group;

R^{6A} is selected from hydrogen, C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl; and

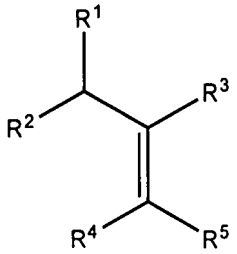
R^{7A} is selected from C_1-C_4 alkyl, semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

5. (Withdrawn) The alkene fluoroalkanol of claim 4, wherein R^{6A} and R^{7A} are both trifluoromethyl.

6. (Withdrawn) The alkene fluoroalkanol of claim 4, wherein one of R^{6A} and R^{7A} is methyl and the other is trifluoromethyl.

7. (Currently amended) A method for synthesizing an alkene fluoroalkanol, comprising contacting (a) an olefinic reactant directly substituted on an olefinic carbon atom with a substituted or unsubstituted methyl group with (b) ~~an asymetrically substituted~~ a fluorinated ketone, under reaction conditions and for a time period effective to allow addition of the olefinic reactant to the carbonyl carbon of the fluorinated ketone, wherein the substituted or unsubstituted methyl group is of the formula $-CHR^1R^2$, such that the olefinic reactant has the structure of formula (I)

(I)



wherein:

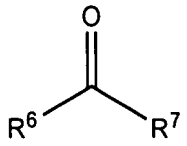
R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^2 is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl; and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring,

and wherein the fluorinated ketone has the structure of formula (II)

(II)



wherein:

R^6 is a fluorinated group selected from substituted C_1-C_{24} alkyl, (fluorinated C_2-C_{24} acyl)-substituted methyl, (fluorinated C_2-C_{24} acyl)-substituted difluoromethyl, and -(CO)-R in which R is halo, substituted C_1-C_{24} alkyl, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino; and

R^7 is fluorinated C_1-C_{24} alkyl, with the proviso that, when the olefinic reactant is not isobutylene, pinene, butenyl methyl ether, isopropenyl methyl ether, *exo*-2-methylene norbornane, 5-vinyl-2-norbornene, *exo*-methylene cyclopentane, or *exo*-methylene cyclohexane, R^6 and R^7 are different or taken together to form a ring.

8. (Canceled).

9. (Currently amended) The method of claim 7 [[8]], wherein:

R^1 is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^2 is selected from hydrogen, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, and fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{30} alicyclic group.

10. (Original) The method of claim 9, wherein:

R^1 is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^2 is hydrogen or C_1-C_8 alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is fluorinated C_1-C_8 alkyl; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{18} alicyclic group.

11. (Original) The method of claim 10, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{12} alicyclic group.

12. (Original) The method of claim 11, wherein the olefinic reactant is selected from isobutylene, pinene, butenyl methyl ether, isopropenyl methyl ether, *exo*-2-methylene norbornane, 5-vinyl-2-norbornene, *exo*-methylene cyclopentane, and *exo*-methylene cyclohexane.

13-14 (Canceled).

15. (Currently amended) The method of claim 14, wherein R^6 is selected from ~~hydrogen, C_1-C_{24} alkyl,~~ substituted C_1-C_{24} alkyl, ~~C_3-C_{25} acylmethyl,~~ (fluorinated C_2-C_{24} acyl)-substituted methyl, and (fluorinated C_2-C_{24} acyl)-substituted difluoromethyl.

16. (Currently amended) The method of claim 15, wherein:

R^6 is selected from ~~hydrogen, C_1-C_{12} alkyl,~~ C_1-C_{12} haloalkyl, ~~C_3-C_{13} acylmethyl,~~ (fluorinated C_2-C_{12} acyl)-substituted methyl, and (fluorinated C_2-C_{12} acyl)-substituted difluoromethyl; and

R^7 is ~~C_1-C_{12} alkyl or~~ fluorinated C_1-C_{12} alkyl.

17. (Currently amended) The method of claim 16, wherein:

R^6 is selected from ~~hydrogen, C_1-C_8 alkyl,~~ fluorinated C_1-C_8 alkyl, ~~C_3-C_9 acylmethyl,~~ (fluorinated C_2-C_8 acyl)-substituted methyl, and (fluorinated C_2-C_8 acyl)-substituted difluoromethyl; and

R^7 is ~~C_1-C_8 alkyl or~~ fluorinated C_1-C_8 alkyl.

18. (Currently amended) The method of claim 17, wherein:

R^6 is selected from ~~hydrogen, C_1-C_4 alkyl,~~ semi-fluorinated C_1-C_4 alkyl, perfluorinated C_1-C_4 alkyl, and R^{12}-(CO)-$CR^{10}R^{11}$- in which R^{10} and R^{11} are H or F and R^{12} is methyl or trifluoromethyl; and

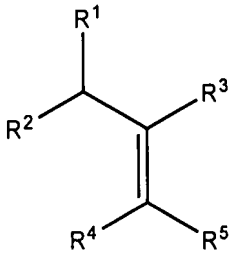
R^7 is selected from ~~C_1-C_4 alkyl,~~ semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.

19. (Canceled).

20. (Original) The method of claim 18, wherein R^6 is R^{12}-(CO)-$CR^{10}R^{11}$-.

21. (Currently amended) The method of claim 20, wherein the fluorinated ketone is ~~selected from trifluoroacetylacetone and~~ hexafluoroacetylacetone.

22. (Currently amended) A method for synthesizing an alkene fluoroalkanol, comprising contacting (a) an olefinic reactant directly substituted on an olefinic carbon atom with a substituted or unsubstituted methyl group with (b) a fluorinated carbonyl compound under reaction conditions and for a time period effective to allow addition of the olefinic reactant to the carbonyl carbon of the fluorinated carbonyl compound, wherein the substituted or unsubstituted methyl group is of the formula $-CHR^1R^2$, such that the olefinic reactant has the structure of formula (I)

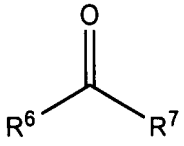
(I) 

wherein:

R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;

R^2 is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl; and further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a ring, and wherein the fluorinated carbonyl compound has the structure of formula (II)

(II) 

wherein:

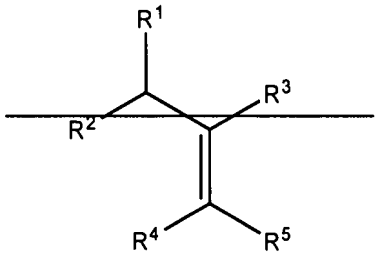
R^6 is a fluorinated group selected from substituted C_1-C_{24} alkyl, (fluorinated C_2-C_{24} acyl)-substituted methyl, (fluorinated C_2-C_{24} acyl)-substituted difluoromethyl, and -(CO)-R in which R is halo, substituted C_1-C_{24} alkyl, C_1-C_{24} alkylamino, or di(C_1-C_{24} alkyl)amino; and

R^7 is fluorinated C_1-C_{24} alkyl,

with the proviso that the fluorinated carbonyl compound is other than hexafluoroacetone.

23. (Currently amended) The method of claim 22, wherein ~~the substituted or unsubstituted methyl group is of the formula $-CHR^1R^2$, such that the olefinic reactant has the structure of formula (I)~~

~~(I)~~



~~wherein:~~

~~R^1 is selected from hydrogen, C_1-C_{24} alkyl, substituted C_1-C_{24} alkyl, C_1-C_{24} alkoxy, and substituted C_1-C_{24} alkoxy;~~

~~R^2 is selected from hydrogen, C_1-C_{24} alkyl and substituted C_1-C_{24} alkyl;~~

~~R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_{24} alkyl, and substituted C_1-C_{24} alkyl; and further wherein~~ any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form an alicyclic group.

24. (Original) The method of claim 23, wherein:

R^1 is selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group, and C_1-C_{12} alkoxy;

R^2 is selected from hydrogen, C_1-C_{12} alkyl, and substituted C_1-C_{12} alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_{12} alkyl, C_1-C_{12} hydroxyalkyl, fluorinated C_1-C_{12} alkyl, fluorinated C_1-C_{12} hydroxyalkyl, and fluorinated C_1-C_{12} alkyl substituted with a protected hydroxyl group; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{30} alicyclic group.

25. (Original) The method of claim 24, wherein:

R^1 is selected from hydrogen, C_1-C_8 alkyl, C_1-C_8 alkoxy, and fluorinated hydroxyalkyl having the structure $-(L^1)_{n1}$-CR^8R^9-OH in which n1 is zero or 1, L^1 is C_1-C_6 aliphatic, R^8 is

selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^9 is fluorinated C_1-C_8 alkyl;

R^2 is hydrogen or C_1-C_8 alkyl;

R^3 , R^4, and R^5 are independently selected from hydrogen, C_1-C_8 alkyl, and fluorinated hydroxyalkyl having the structure $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_6 aliphatic, R^{8A} is selected from hydrogen, C_1-C_8 alkyl, and fluorinated C_1-C_8 alkyl, and R^{9A} is fluorinated C_1-C_8 alkyl; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{18} alicyclic group.

26. (Original) The method of claim 25, wherein:

R^1 is selected from hydrogen, C_1-C_4 alkyl, C_1-C_4 alkoxy, and $-(L^1)_{n1}-CR^8R^9-OH$ in which n1 is zero or 1, L^1 is C_1-C_4 aliphatic, R^8 is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^9 is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl;

R^2 is hydrogen or C_1-C_4 alkyl;

R^3, R^4, and R^5 are independently selected from hydrogen, C_1-C_4 alkyl, and $-(L^2)_{n2}-CR^{8A}R^{9A}-OH$ in which n2 is zero or 1, L^2 is C_1-C_4 aliphatic, R^{8A} is selected from hydrogen, methyl, trifluoromethyl, difluoromethyl, and fluoromethyl, and R^{9A} is selected from methyl, trifluoromethyl, difluoromethyl, and fluoromethyl; and

further wherein any two of R^1, R^2, R^3, R^4, and R^5 may be taken together to form a C_3-C_{12} alicyclic group.

27. (Original) The method of claim 26, wherein the olefinic reactant is selected from isobutylene, pinene, butenyl methyl ether, isopropenyl methyl ether, exo-2-methylene norbornane, 5-vinyl-2-norbornene, exo-methylene cyclopentane, and exo-methylene cyclohexane.

28. (Canceled).

29. (Canceled).

30. (Currently amended) The method of claim 22[[29]], wherein R^6 is selected from ~~hydrogen, C_1-C_{24} alkyl,~~ substituted C_1-C_{24} alkyl, ~~C_3-C_{25} acylmethyl,~~ (fluorinated C_2-C_{24} acyl)-substituted methyl, and (fluorinated C_2-C_{24} acyl)-substituted difluoromethyl.

31. (Currently amended) The method of claim 30, wherein :

R^6 is selected from ~~hydrogen, C_1-C_{12} alkyl,~~ C_1-C_{12} haloalkyl, ~~C_3-C_{13} acylmethyl,~~ (fluorinated C_2-C_{12} acyl)-substituted methyl, and (fluorinated C_2-C_{12} acyl)-substituted difluoromethyl; and

R^7 is ~~C_1-C_{12} alkyl or~~ fluorinated C_1-C_{12} alkyl.

32. (Currently amended) The method of claim 31, wherein:

R^6 is selected from ~~hydrogen, C_1-C_8 alkyl,~~ fluorinated C_1-C_8 alkyl, ~~C_3-C_9 acylmethyl,~~ (fluorinated C_2-C_8 acyl)-substituted methyl, and (fluorinated C_2-C_8 acyl)-substituted difluoromethyl; and

R^7 is ~~C_1-C_8 alkyl or~~ fluorinated C_1-C_8 alkyl.

33. (Currently amended) The method of claim 32, wherein:

R^6 is selected from ~~hydrogen, C_1-C_4 alkyl,~~ semi-fluorinated C_1-C_4 alkyl, perfluorinated C_1-C_4 alkyl, and R^{12}-(CO)-$CR^{10}R^{11}$- in which R^{10} and R^{11} are H or F and R^{12} is methyl or trifluoromethyl; and

R^7 is selected from ~~C_1-C_4 alkyl,~~ semi-fluorinated C_1-C_4 alkyl, and perfluorinated C_1-C_4 alkyl.